JON M. HUNTSMAN, JR.
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**State of Utah**

**Department of Natural Resources**

MICHAEL R. STYLER
*Executive Director*

**Division of Oil, Gas & Mining**

JOHN R. BAZA
*Division Director*

May 20, 2005

Duane Crutchfield
Ash Grove Cement Company
PO Box 51
Nephi, Utah 84648

Subject: Second Review of Notice of Intention to Amend Large Mining Operations, Ash Grove Cement Company, Nielson Sandstone Mine, M/023/012, Juab County, Utah

Dear Mr. Crutchfield:

The Division received your response to Mr. Baker's comments on April 29, 2005. After reviewing the information, there are still a couple of concerns that need to be addressed before final approval may be granted.

**R647-4-111 - Reclamation Practices**

**111.12 Topsoil redistribution**

Appendix 110-2 says elemental sulfur will be added to any slag within three feet of the surface, but page 110-2 says sulfur will be added to any slag within four feet of the surface. Please correct this discrepancy. Sulfur needs to be added to any slag within four feet of the surface. (PBB)

The chemical reaction that converts elemental sulfur to sulfuric acid requires oxygen, water, and time. Once the sulfur has been applied and ripped into the slag, it needs to be allowed to react and reduce the pH. It appears this should take at least a year, so unless the operator can show that waiting is not necessary, the plan should contain a commitment to apply the sulfur, mix it with the slag, wait a year, then test the pH at a depth of 2-3 feet. If the pH at his depth is acceptable (less than 9.0) then soil could be applied and the area seeded. (PBB)

The plan should include a worse case contingency to have to apply additional sulfur to areas where the treatment has failed to attain the pH of this material. (DJ)

The areas where the sulfur is applied should be ripped then cross-ripped to a minimum of 3 feet to assure that the material is loosened sufficiently to allow for the penetration of the sulfur to a depth of the ripping. (DJ)

The plan indicates that metals should not be mobile because the pH is so high, and while this is true for many metals, the mobility of some metals and of certain species of metals is increased with an increasing pH. Lowering the pH may allow some metals to mobilize. Please include a commitment that if some of the slag remains, it will be tested for soluble aluminum and manganese after the acidification process. Additional TCLP and SPLP tests will need to be run to verify that the no other metals have become mobile due to the lowering of the pH. (PBB & DJ)

**R647-4-113 – Surety**

The surety should be re-calculated to include the testing and additional activities.
The surety should also reflect the need to mobilize and demobilize the equipment required to loosen the material and apply the sulfur. (DJ)

When we receive your response to these remaining concerns, we will ask that you send us two clean copies of the complete and corrected plan. Upon final approval of the permit, we will return one copy stamped "approved" for your records. Please provide a response to this review as quickly as possible so we can get this approval to you.

If you have any questions in this regard please contact Tom Munson, Paul Baker, or Doug Jensen of the Minerals Staff. Thank you for your cooperation in completing this permitting action.

Sincerely,

Susan M White

Susan M. White
Permit Supervisor
Minerals Regulatory Program

SMW:TM:jb
cc: Jerry Mansfield, BLM
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